

A method of reducing electronic work function, reducing threshold field emission values, converting semiconducting behavior to metallic behavior, increasing the electron density state at the Fermi level, and increasing electron emission site density, of nanostructure or nanotube-containing material, the method including: forming openings in the nanotube-containing material; introducing a foreign species such as an alkali metal into at least some of the openings; and closing the openings, thereby forming capsules filled with the foreign species, and forming field emission cathode and flat panel displays using these capsules.